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# Findings On Grove Costs And Returns

ANNUAL SUMMARIES RELEASED FROM FLORIDA AGRICULTURAL EXTENSION SERVICE

BY JEFFERSON THOMAS

Annual set of summaries, giving findings on costs and returns in typical Florida citrus groves, was released late in April from the State Agricultural Extension Service at Gainesville. Calculated on a crop year basis—costs from September 1st to August 31st inclusive and returns between October and June, — the present figures differ in a minor degree from previous statistics, which were compiled for twelve month fiscal periods.

Studies furnishing the results summarized in the latest report applied to costs incurred in the year which began September 1, 1932 and ended August 31, 1933 and to returns received in the approximately nine months, October 1933 to June 1934, inclusive. Supplementing the foregoing is a three-year recapitulation on a portion of the groves, covering the crop periods, 1930-31, 1931-32 and 1932-33.

Findings that tabulate the costs and returns for the crop year 1932-33—with proceeds from fruit included up to June, 1934—were taken from records kept on 264 groves. Reduction to this number from the 269 that had been studied in the previous year is attributed to the seasonal

modifications in the system pertaining to the periods.

Groves the owners or managers of which cooperated again were mostly located in the four heavy citrus-producing counties—Polk, Orange, Lake and Highlands. Only 11 of the 264 were elsewhere—four in Osceola county, three in Indian River, two in DeSoto and one each in Hillsborough and St. Lucie counties.

Age division of the 264 groves separated them as follows: six years and under, 14; seven to ten years, 68; over ten years, 182; average age, 14 years. In size, the properties ranged from 2.25 acres to 788 acres, averaging 35.5 acres.

Responsibility for grove operations was borne by individual owners, corporation owners and commercial caretakers representing non-resident owners.

Records in most cases were transmitted monthly to Gainesville, where they underwent assembling.

Names of grove owners or managers are not made public but each one is furnished a summary of his own figures.

## Facts The Records Disclose

Separation of the records as between groves composed of trees ten

years or under in age and planting of longer standing has been necessary that erroneous conclusions might be avoided. While costs per acre were measurably higher on the older properties, the returns were more than proportionately greater. Inclusion in a single group of all the groves would have given general averages misleading in respect both to trees above and below the ten year age point of division.

Costs, as calculated under the system of accounting devised for this research effort, cover all cash outlay, plus interest and depreciation ON EQUIPMENT. Supervision allowances are charged only in cases where the service is supplied by men employed for the specific purpose. Charges were made, however, at prevailing wages, for the labor of owner-operators and members of their families. Interest on capital invested, whether borrowed or owned, and depreciation on groves, are not taken into account.

Returns have been figured on the basis of a net representing the amounts per acre and per box available for taking care of investment interest, tree depreciation and owners'

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# “Tree-Gold Cooperative”

ANNOUNCEMENT OF NEW MARKETING ORGANIZATION MADE,  
HEADQUARTERS AT ORLANDO

Tree-gold Cooperative Growers is the name of the newest growers' citrus marketing organization, the formation of which has been announced from Orlando.

The original incorporators are Lawrence Gentile of Gentile Bros. Co., former state senator A. W. (Tony) Young of Vero Beach and Hudson J. McReynolds of Orlando with groves there and elsewhere. According to rumors the organization has been in process for some time, but filing of the incorporation papers gave first official confirmation to the reports which had been current.

While still in process of formation, with much to be done prior to the opening of citrus shipping, it is understood the organization already has fully perfected its plans of operation; and plans to take the field next fall as a full fledged growers' shipping concern with a large tonnage of fruit assured to it definitely. The officers of the new concern are not yet officially announced, but it is learned that Lawrence Gentile will head it as the president and chief executive officer. Mr. Gentile has a lifetime of citrus experience behind him, and is exceedingly well known both to the growers of the state and in the markets where citrus fruits are sold. He has for the past several years been president of Gentile Bros. Co., one of the largest grove-owning concerns in Florida, which has been engaged in marketing its own fruit along with that of a certain number of growers in territories adjacent to the Gentile packing houses.

It is generally assumed that Joseph Gentile and H. C. Gettier, long heading the Gentile sales department, will function actively in connection with the enlarged sales department of the new cooperative.

Senator Young is one of the very well known citrus figures of the Indian River. With his brother he owns and operates important citrus acreage in the vicinity of Vero Beach, where he has long been an important figure in both citrus and civic affairs. Hudson J. McReynolds of Orlando likewise is the owner of some excellent grove properties in Putnam, Lake, Orange and Polk counties, and

enjoys a wide acquaintance in growing circles.

It is a coincidence that Lawrence Gentile, A. W. Young and Hudson J. McReynolds were members of the Florida Citrus Control Committee of the AAA. Both Messrs. Gentile and Young saw active service on that board. Mr. McReynolds though appointed by Washington to act upon the 1934-35 committee did not take his seat. He resigned "in the interests of harmony" before that board began to function, the allegation having been made that he was allied with the Florida Citrus Exchange, which fact, some held, would at that time have given the Exchange an undue preponderance of membership upon that body.

It is understood the new organization will market its fruit under the trademark of Tree-gold, which fact accounts for the selection of its name. Plans are said to contemplate advertising and merchandising of fruit under the Tree-gold trademark in the most modern manner; and marketing connections in the more important markets are reported fully effected, with contemplated arrangements which will assure wide distribution for the new organization.

The organization is cooperative, with one million dollars in capital stock authorized as a beginning, in accordance with the newer cooperative laws now in force in Florida. It is to be statewide in the scope of its operations; and will own and operate packing houses located so as to afford its members best and most economical packing service. Reduced costs of packing, together with effective distribution, are its announced objects.

Headquarters will be maintained in Orlando, from which point both packing and selling operations will be controlled.

Fruit from the large grove holdings of the incorporators alone will give the new cooperative organization an important tonnage right at the start. However, reports current in growing circles are to the effect that many other large and small growers likewise are already committed to membership in the Tree-gold organization; and that next fall it

will begin business with tonnage sufficiently large to entitle it to a most important place among the Florida marketing agencies.

Announcement of the full board of directors, which will come later, will, it is said, reveal the scope and influence of the new cooperative.

Advantageous features which the new cooperative expects to present are said to be a centralized control of all packing and shipping operations in the manner of the most successful commercial fruit concerns, combined with the savings which are anticipated to come from large volume and economical operation. As a cooperative the organization will share with all its grower-members whatever savings are affected.

No definite announcement of selling policies yet has been made, but reports are that advertising and merchandising on the lines followed by some of the highly successful cooperative fruit agencies in other states are expected to make Tree-gold selling policies most effective right from the start.

Possession of the selling outlets long well developed by the 50-year old Gentile concern, plus certain others which are to be obtained through affiliations later to be announced, are said to give the new cooperative an exceptional start in the field of marketing, with intent to enlarge the selling and merchandising forces rapidly to carry the Tree-gold trademark to the front with both the retail trade and the consuming public.

Announcement of the new Tree-gold organization now fulfills the expectations created by the rumors recently circulated in citrus circles; and progress of the new organization will be of very considerable interest in both growing and shipping circles.

Carlot shipments of industrial and manufactured goods from 16 North-eastern industrial states to 10 South-eastern agricultural states increased by 38.8 percent in the first year after the nation's recovery program got under way, according to results of a study by the Agricultural Adjustment Administration.

# Interesting New Uses Of Soluble Borates In The Packing Houses

\* RICHARD M. STEWART, III, WINTER HAVEN, FLA.

AT THE MEETING OF STATE HORTICULTURAL SOCIETY, VERO BEACH,  
APRIL 10TH, 1935

Before going into these new developments it would seem advisable to briefly review the past history and performance of borax as such, as used to control the various forms of decay which afflict our citrus fruit and give us so many headaches in the form of allowances and discounts. Under the market conditions which have prevailed over the past few seasons, these discounts for decay have often meant the difference between a profit and red ink on a car shipment.

About ten years ago it was discovered that fruit dipped in a cold borax solution of from 3% to 5% concentration was far less susceptible to the mold decays than similar fruit not so treated. In fact, fruit so treated was practically immune to the ravages of blue or green mold. However, this treatment did not satisfactorily reduce stem end rot, which after all is the boogie-man of the citrus decay family, as far as we Florida folks are concerned.

So, two seasons ago the United States Department of Agriculture laboratories at Orlando conducted an extensive series of tests, using higher concentrations of borax. Much to the delight of all concerned, this was found to be highly effective in controlling stem end decay. However, because of the low solubility of borax in cold water, it was found necessary to heat the solutions in order to hold the desired concentration, which tests showed to be about 8%.

The bulletin issued by the Department of Agriculture (J. R. Winston, Sept. 25, 1933) summarizing the results of this work, brought to light several other interesting points, to-wit: That among the many materials which have been tested, borax was certainly the most effective fungicide. That to gain the maximum in desired results from this treatment, fruit should be dipped in a warm 8%

solution of borax immediately upon its arrival at the packing house, before the assorted and sundry fungi had the opportunity to entrench themselves too deeply to be reached. That a temperature ranging from 100° F. to 110° F. was necessary to keep the 8% concentration in solution. At lower temperatures the borax crystallized out rapidly. That while refrigeration, our former bulwark against decay losses, was effective only while fruit was in transit, a suitable borax treatment successfully retarded decay not only while in the packing house and in transit, but also during the further period normally required for distribution, retail sale and ultimate consumption.

As a result of these findings many packing houses throughout the state installed borax treating tanks on their receiving platforms, with results which were highly gratifying and looked very nice on the decay records. Occasional lapses from the recommended procedure on the part of some house managers usually brought a hurried return to use of the borax. They found it was not always possible to look at a crop just received at the house and accurately determine its resistance to decay. Bad guesses often proved costly. Along this line I am reminded of a conversation I had last week with the manager of one of the larger houses in the state. He told me that thinking to save a fraction of a cent per box he had ordered the discontinuance of the platform borax dip for a few days. To quote him, "Before I could turn around it had cost me \$1200.00. I concluded that borax was a blank blank cheap insurance!"

Repeated instances like this have resulted in the general acceptance of the fact that borax dipping, properly done, is our best standby in fighting decay. But changing conditions bring changing needs, and the weird season at hand, to whose conclusion we are all looking forward, has brought many changes.

Admittedly, there have been some

fair objections to the use of borax treatment as heretofore described. The necessity of heating the tanks, and keeping them warm even while shut down, to avoid the crystallization of the borax on the tank walls and conveyors, has resulted in some trouble and indirect expense. This crystallizing habit of borax when tank temperatures are lowered is indeed annoying, for it is difficult in the extreme to redissolve it upon resumption of operations. Furthermore, it has been realized to an increasing extent that the heating of fruit certainly does it no good, and quite often has an undesirable effect on quality. Since the advent of the coloring processes so widely adopted this season, and which unavoidably require some heating, it seems more than ever desirable to avoid other heat processes wherever possible.

To this end the Orlando Government Laboratories, cooperating with the Florida Citrus Exchange has for over a year been conducting tests on various borates which are more soluble than borax in cold water. While not yet released for publication, the trend of these tests has been informally available to packing house operators. Following preliminary work in the laboratory, the tests were continued on a commercial scale. They caused the packing house operators to become highly interested in the advantages offered by the use of alkaline borates which had been found to be adequately soluble in cold water. However, no such borates were commercially available at a price which the packing houses could well afford to pay.

The American Potash and Chemical Corporation, because of its facilities for economically producing various borates, was approached by certain packing house operators, and following a series of cooperative tests, has developed a new material which fully equals borax as to fungicidal efficiency, and has marked advantages over borax in regard to cold water

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\*Formerly Field Assistant, Division of Fruit and Vegetable Crops and Diseases, Bureau of Plant Industry, U. S. D. A. Now State Field Representative American Potash & Chemical Corporation.



# Spraying For The Control Of Citrus Scab

BY GEO. D. RUEHLE

CITRUS EXPERIMENT STATION, LAKE ALFRED, FLORIDA, AT MEETING  
OF FLORIDA STATE HORTICULTURAL SOCIETY

As early as 1896, Swingle and Webber reported that citrus scab could be controlled by spraying with bordeaux mixture or ammoniacal solution of copper carbonate. Later pathologists in Florida, especially Fawcett (1912), Grossenbacher (1916) and Winston (1923), repeatedly demonstrated that the disease could be effectively controlled by spraying. Commercial control of the disease by this means has also been reported in Porto Rico, Argentina, New South Wales, and other citrus producing regions where the disease is of importance. In all of these spraying experiments, bordeaux mixture has been found to be the most effective fungicide tested.

The chief objection to bordeaux mixture on Florida citrus is that its use leads to an increase in numbers of scale insects, and necessitates the application of one or more scaleicides later in the season. With the introduction of the bordeaux-oil emulsion combination about 1920, it was hoped that disease and scale control could be accomplished at the same time. Later experience, however, showed that while the bordeaux-oil emulsion possessed advantages over plain bordeaux as a spray for citrus, the former could not be relied upon to control the scale insects. It has been the experience of a large number of growers that spraying with an oil emulsion to check scale increase was necessary whether oil was added or left out of the spring applications of bordeaux mixture.

In the earlier spraying experiments, lime-sulfur sprays proved to be of some value for scab control, but were generally much less effective than bordeaux mixture. The use of lime-sulfur in disease control on citrus, however, aids greatly in the control of rust mites, red spiders and scales. Because of this, some growers still rely upon lime-sulfur for the control of citrus scab.

In recent years, new forms of sulfur, copper and other chemicals have been introduced to combat fungous diseases. With the aim of testing

the more promising of these new sprays for scab control, or of so modifying the spraying program then in practice, so that it would prove less troublesome in promoting scale increase, a new series of spraying experiments was begun in 1932.

## Spraying Experiments in 1932

The experiments performed in 1932 were more or less preliminary, to test out the relative effectiveness of the standard bordeaux and lime-sulfur programs in use for the control of scab and to secure a comparison of some of the newer fungicides with these standard spray materials. Combinations of fungicides in any one plot were avoided in order to determine the relative effectiveness of each material. Unfortunately, in the season of 1932, a prolonged drouth occurred during the spring months, which had the effect of retarding both the development of the causal fungus and of the citrus trees. There is little doubt that the effectiveness of some of the spray materials was modified by these abnormal weather conditions.

The experiments were conducted in three different groves in widely separated localities. One was located near Vero Beach on grapefruit, a second near Bradenton on grapefruit and the third at Lake Alfred on scattered plantings of tangelos and King oranges. An adequate number of trees were left unsprayed in each grove to serve as checks. To determine the amount of control obtained, a representative number of fruits were examined from each plot, after the danger of further infection to the fruit was passed. Wherever the size of the plot permitted, 1000 fruits were examined at random, and these were graded according to the severity of scab infection.

The results of these experiments confirmed the conclusions of earlier workers that bordeaux mixture was the most reliable fungicide then available for the control of citrus scab. From 89 to 96 percent scab-free fruits were produced in the various plots where dormant and bloom

applications of this fungicide were made, as compared to 3.66 to 29 percent scab-free fruits in unsprayed check trees in these same groves. Somewhat better control resulted when oil emulsion or calcium caseinate were added to the mixture, than when it was used plain. At Bradenton, a single application of bordeaux-oil emulsion in the bloom produced 69 percent scab-free fruit, as compared to 94 percent in the plot where dormant and bloom applications of this spray were made, and to 26 percent in the unsprayed check trees in the same grove. In all of the plots receiving either bordeaux mixture or bordeaux-oil emulsion, it was necessary to apply oil emulsion later to prevent serious damage from scales.

Copper cyanamide proved less effective than bordeaux mixture and its use led to a large increase in numbers of scale insects. An organic mercury emulsion when made up as a spray with hard water containing sulfur gave practically no reduction in the percentage of scabby fruit, but was effective for the control of purple scale.

Commercial control was not obtained with any of the sulfur compounds tested, including liquid lime-sulfur, dry lime-sulfur, bentonite sulfur, and colloidal sulfur. Of these, the liquid lime-sulfur, used at 1 to 25 dilution as a dormant spray and at 1 to 40 dilution in the bloom, gave the best results. Whenever a severe infection of scab is expected, lime-sulfur alone should not be relied upon for control of the disease. The results obtained on Samson tangelos at Lake Alfred, illustrate what may happen when lime-sulfur is used to combat severe infection. Twelve percent scab-free fruit was produced in the plot where dormant and bloom applications of lime-sulfur were made, as compared to 3.6 percent scab-free fruit in the unsprayed trees and 96 percent scab-free fruit in the trees sprayed twice with bordeaux mixture.

## Spraying Experiments in 1933

Spraying experiments for the control of scab were repeated in the



same localities in 1933. At Vero Beach, in a grove of Marsh grapefruit which had not been sprayed for scab in 1932, three different schedules were compared. In one plot, an attempt was made to control the disease with liquid lime-sulfur combined with bentonite sulfur. In another, a dormant application of bordeaux-oil emulsion was followed by a bloom spray of bordeaux, and an oil emulsion was applied later for scale control.

A similar experiment was performed on seeded grapefruit near Bradenton, with some variations in the spray formulas. Wettable sulfur was combined with liquid lime-sulfur in the sulfur plot, and in the plot receiving two bordeaux sprays, a 2-4-50 formula was used instead of the standard 3-4-50 mixture. In both experiments a scale count was made from the trees before the dormant sprays were applied, and again in the fall, to check on the effect of the various schedules on the scale population.

Several new combinations were tested for control of scab blemish on tangelos at Lake Alfred.

Two applications of bordeaux mixture, the first as a dormant spray

with 1 percent oil emulsion added, and the second just after the petals had fallen, without the addition of oil, again gave the most effective control. The 3-4-50 formula produced 97 percent scab-free fruit in the Vero Beach plot, and 87 percent was free of scab blemish in the Bradenton plot where the 2-4-50 formula was used. The unsprayed check trees in both groves showed 19 percent of the fruits free of scab blemish. Scale increase was high in both localities, but was more serious in the Bradenton plot where less copper but the same amount of lime was applied.

Satisfactory commercial control of scab was obtained in plots in both localities by applying bordeaux-oil emulsion just before the spring growth started, following just after the bloom with 1-40 lime-sulfur and with two later sprayings of 1-50 lime-sulfur. No serious damage resulted from scale increase in these plots. Trees sprayed in 1932 with two bordeaux sprays showed a marked reduction in amount and severity of infection in 1933, without further sprays being applied.

The addition of the bentonite sulfur at the rate of 7.5 pounds to 100 gallons of liquid lime-sulfur was

much more effective for scab control than straight lime-sulfur. Sixty-three percent scab-free fruits were produced at Vero Beach from two applications of this spray as compared to 19 percent unblemished by scab in the check plot. Plain wettable sulfur added to lime-sulfur was much less effective.

An ethyl mercury oleate oil emulsion formula containing 20 percent more fungicide than the formula used in 1932, when mixed as a spray with water free of sulfur, gave fair commercial control of scab on Samson tangelos at Lake Alfred. A stimulation of growth of the trees apparently resulted from the use of this material. Preliminary experiments tung-oil emulsion as a spreader for bordeaux mixture, while far from conclusive, indicate that this oil is less effective in checking scale insects, and has no special advantage over proprietary oil emulsions as a spreader for bordeaux as used on citrus foliage.

#### Spraying Experiments in 1934

Spraying experiments for the control of scab were again carried out at Bradenton, Lake Alfred and Vero Beach. At Bradenton, the same plots

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TABLE 1.—Results Obtained from the use of Various Materials for the Control of Scab on Grapefruit at Vero Beach in 1934

Plot No.	Materials and Concentrations	Date Applied	Scab Blemish on Fruit		Melanose Lesions on Matured Fruit per Square Inch Field			Scale Infestation	Live Scales per leaf in Oct. 1943
			None percent	Present percent	0-10 percent	11-50 percent	More than 50 percent		
1	None — unsprayed check		3.1	96.9	30.5	60.2	9.3	.56	1.3
2	(1) basic copper sulfate 1½-50 plus 1% oil	Jan. 25	97.5	2.5	87.7	11.9	.4	.72	5.7
	(2) basic copper sulfate 1½-50 plus caseinate	Apr. 13							
	(3) oil emulsion 1-80 (approx. 1% oil)	June 7							
3	(1) bordeaux 3-4-50 plus 1% oil	Jan. 25	95.3	4.7	82.9	16.1	1.0	.98	7.7
	(2) bordeaux 1½-2-50 plus caseinate	Apr. 13							
	(3) oil emulsion 1-80 (approx. 1% oil)	June 7							
4	(1) Bordol-Mulsion 1-40	Jan. 25	79.3	20.2	76.9	22.2	.9	.80	3.3
	(2) Bordol-Mulsion 1-50	Apr. 13							
5	(1) phenyl mercury oleate-oil emulsion 1-60	Jan. 25	25.3	74.2	42.1	53.0	4.9	.35	1.9
	(2) phenyl mercury oleate-oil emulsion 1-60	Apr. 13							
6	(1) ethyl mercury oleate-oil emulsion 1-60	Jan. 25	59.0	41.0	35.1	60.3	4.6	.6	2.4
	(2) ethyl mercury oleate-oil emulsion 1-60	Apr. 13							
7	(1) bordeaux 3-4-50 plus 1% oil	Jan. 25	91.4	8.6	70.3	23.7	1.0	1.3	2.0
	(2) lime-sulfur 1-40	Apr. 13							
	(3) lime-sulfur 1-40	May 4							
	(4) lime-sulfur 1-50	June 7							
8*	(1) lime-sulfur 1-25 plus Kolofog 6-100	Jan. 25	93.6	6.4	46.9	50.4	2.7	3.0	6.1
	(2) lime-sulfur 1-40 plus Kolofog 3-100	Apr. 13							
9	(1) bordeaux 3-4-50 plus 1% oil	Jan. 25	93.7	6.3	74.5	25.2	.2	2.7	3.9
	(2) lime-sulfur 1-40 plus Kolofog 4-100	Apr. 13							
	(3) lime-sulfur 1-40 plus Kolofog 4-100	May 4							
10	(1) bordeaux 3-4-50 plus 1% oil	Jan. 25	90.6	9.4	72.3	27.1	.6	2.2	6.5
	(2) lime-sulfur 1-40	Apr. 13							
	(3) lime-sulfur 1-40	May 4							
11	(1) bordeaux 3-4-50 plus 1% oil	Jan. 25	90.3	9.7	74.0	25.2	.3	1.7	7.7
	(2) oil emulsion 1-80 (approx. 1% oil)	June 7							

\* Sprayed twice with Bordeaux in 1933.



## The Citrus Industry

with which is merged The Citrus Leaf

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### CITRUS BILLS APPROVED

As this issue of The Citrus Industry goes to press word comes from Tallahassee that both the Senate and Lower House have approved the report of the conference committee appointed to reconcile differences in the various citrus bills as previously adopted by the Senate and amended by the House.

As reported by the conference committee, composed of Senators J. J. Parrish and S. L. Holland and Representatives George F. Westbrook, J. Locke Kelly and M. R. Driver, and approved by both House and Senate, the bills now provide for a commission of eleven members to control and govern citrus operations in the state and to supervise distribution of the crop. Of this commission, the conference report as adopted, provides that seven members of said Commission "shall be growers not connected with any packing, shipping or marketing agency or association, either as officers or paid employees."

The amendment by the House in regard to the handling of the advertising provided for in the bills, was revised to read as follows: "Funds expended under this Act for advertising shall be expended through an established advertising agency within the State of Florida."

The advertising fund is to be created through an assessment of one cent per box on oranges, three cents per box on grapefruit and five cents per box on tangerines.

Other provisions of the several bills passed by both House and Senate were outlined in detail in the last issue of this publication.

The adoption of the conference report which now awaits only the signature of the Governor, makes certain the absolute control of the committee by the growers themselves. Any ob-

jections which may have been raised to former set-ups for the control of operations in the citrus field on the ground that the growers were not given sufficient voice, is obviated under the provisions of the present Act. With seven members out of eleven, the growers are in position to dominate the commission on all matters affecting the growers' interests.

The provision that all advertising funds created by the Act shall be spent through an established Florida agency will meet with general approval. Certainly there are agencies in Florida abundantly equipped to handle the business, and they are more closely aligned with the citrus field than is possible with an outside agency.

The several bills dealing with the citrus situation had the support of growers generally. Indeed, there was a more nearly united front in support of the bills than has ever before been presented by the industry. Whatever of opposition developed was in regard to specific details, and not against the general purpose of the measure presented.

Now that the legislation has finally been enacted it will be interesting to observe the operations of the set-up once the personnel of the Control Commission has been announced. The legislation itself appears to be good. Its successful operation will depend upon the personnel of the committee and the degree of support vouchsafed by the growers.

### GROWERS LOAN AUTHORIZED

Authorization of grower loans through the farm loan agencies of the government for the purpose of rehabilitating groves damaged by the December freeze should go far toward re-establishing those groves which were so severely affected by the freeze.

However, growers desirous of taking advantage of these government loans must act quickly to secure the benefits of Federal co-operation. The time limit for filing applications is short and no time should be lost by growers who are eligible for the assistance tendered by the government agencies.

Elsewhere in this issue of The Citrus Industry a complete resume of the order under which these loans may be secured and the methods of procedure by applicants, is published. Growers desiring to profit by the action of Federal government in authorizing such loans should study this order carefully and act promptly. County agents and other federal officials will be glad to assist growers in making out their applications or rendering any other service required.

The wise grower will prepare to take advantage of improving conditions by taking every precaution to produce the highest quality fruit of the best possible appearance. Judicious use of plant foods and pest control are essential parts of such a program.

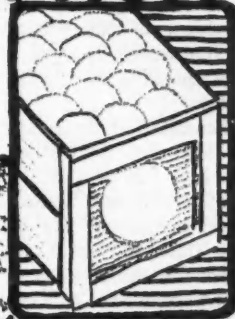
The best salesman in any market is a superior product attractively displayed.

# Compare Results with NACO FERTILIZERS

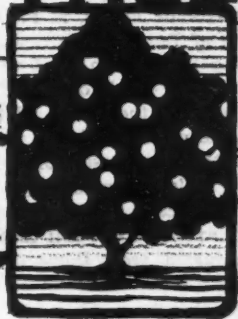
.... in quality of fruit, in tree growth, and in improved soil conditions and you will find that NACO Fertilizers really are the most economical even though other brands may be offered at a lower price---or greater discount.

Fruit, trees and soils respond to sensible methods of cultivation and balanced diet of plant foods . . . a few cents difference in cost of fertilizer per tree may mean dollars difference in returns from the current crop of fruit as well as for future crops.

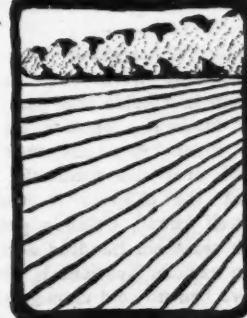
## FRUIT



## TREE



## SOIL



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# IMPRESSIONS

.. By ..  
Frank Kay Anderson

Alf B. Michael Jr. of Wabasso has successfully defended his moth class sailing championship, which probably means that next year's national championship races again will be held in Florida waters. The practice is for the champion to name the location for the races.

This past winter was a hard one on citrus production in many areas. Florida was touched up extensively by Jack Frost. The Texas valley got quite a slap, and in addition suffered considerably from heavy winds. Spain sustained one of the heaviest freezes in the modern history of the citrus industry there. Now comes late information to the effect that it was on of the severest winters ever known in Palestine. Torrential rains made picking a hazard there, and three times high water caused suspension of rail communication between the producing area and the port of Jaffa. Heavy winds also played havoc in Palestine, it being reported that damage from winds was so great that in some groves which began to pick out with 60 per cent first grade fruit this was reduced to less than 20 per cent later. Of the large producers California alone escaped real trouble during the winter.

The value of especially desirable grove locations never was better shown than in Florida this past winter. For instance, consider all the damage which was sustained by groves all over the peninsula, and then, doff the chapeau to George Marsh, well known Orlando grower, who with some six hundred acres of groves in various locations is reported to have had no cold damage whatever in any of them. Evidence of the perspicuity with which that gentleman selects a grove property is further found in his recent purchase of the Les grove at the south end of Lake Tohopekaliga in Osceola county as an addition to his holdings. So great is the water protection to the Lee grove said to be that the December cold is reported not even to have turned a leaf on any tree on the

property.

Plenty of evidence of the advantages of protected locations to other grove properties, but perhaps none more outstanding than the instance of the great Ilseworth grove near Windermere. The Ilseworth grove is the golden apple in the eye of the Brothers Chase, S. O. and J. C., and is one of the great producers upon the peninsula. Notwithstanding heavy damage in all directions round and about there, the trees in the Ilseworth property not only escaped damage, but there was practically no damage to the fruit there. Another outstanding instance of the protective influence of nearly surrounding water.

Returning recently from a tour of the Rio Grande Valley, R. P. Burton, the sage of Emerald, is reported as observing there much dead wood on the trees as a result of Texas' three cold snaps and the severe windstorm during the winter. It is his unofficial opinion that as a result of the damage the Valley citrus acreage hardly can be expected to produce a crop much in excess of one-half that which was marketed from there this past season.

The fishermen in the citrus crowd will now doff their hats to R. C. Black, manager of the Cocoa association of the Exchange. Fishing recently in company with Mayo Hill in Lake Poinsett back of Cocoa the pair got a nice catch of black bass; but the feature of the occasion was the taking of two large mouth bass by Mr. Black on a single cast. One weighed two and one-half and the other three pounds. Using a green zaragosa plug, he made a cast and felt a hit. While reeling in there was another strike; and lo, two fish. This incident is duly attested. Please understand it is recorded here as an interesting FACT. It is not one of those old Dow-Aulds-Crenshaw fishing yarns. We record it as the most interesting sport event among citrus folks since John Snively of Winter Haven made two-holes-in-one in a

certain golf tournament at Davenport a few years back.

That old saw about half the world not knowing how the other half lives, might apply to North Florida's ignorance concerning South Florida, and citrus affairs more particularly. If not afraid of a cracked lip, we commend reading the following extract from a recent speech in congress on the subject of the proposed cross-state ship canal, by none other than Congressman A. R. (Lex) Green of Florida:

"Thousands of acres of land will be brought into cultivation and non-competitive production. The products of Florida are almost non-competitive as far as any other state of the Union is concerned. Our citrus products compete very little with the citrus products of other states of the lower Mississippi Valley and California. Ours, in the main, find their way to the eastern market—those of Texas, Alabama, Mississippi and Louisiana find their way to the upper Mississippi Valley markets, and California citrus products supply the great western section of our country and the central section."

Quick Watson, the smelling salts!

We have long wondered what those much appreciated remarks of Will Rogers lacked. Now we know. Will always begins by admitting that all he knows is what he reads in the newspapers. That accounts for a relative narrowness of view. Will ought to include the Congressional Record in his regular reading, and thereby increase considerably the supply of humor he might accumulate to pass along later.

A serious thought in connection with the Hon. Lex Green's enthusiastic espousal of the cross-state canal, of which the foregoing quotation is only one sterling example, is the lamentable fact that in all the Florida delegation at Washington, in both house and senate, there is none sufficiently posted upon Florida citrus or other agricultural undertakings to be able to rise and correct the many

glaring misstatements which upon occasion do much to embarrass and hamper these important industries. No wonder so much national agricultural legislation is just plain nutty.

The worst packing house fire of recent years was that which recently made total destruction of the Lee County Packing Co.'s house at Fort Myers, with an estimated loss of approximately \$100,000. With a floor space of about one million feet, this was the largest house in that section of the state; and it was exceptionally well equipped. Courtesy of Clint Bolic opened his house there for the packing of the company's remaining fruit.

Which reminds that the Lyons Fertilizer Co.'s recent fire at Tampa certainly hasn't dimmed either the sartorial refugence nor the twinkle in the eye of that well known citrus figure C. W. (Joe) Lyons. Rebuilding operations are under way at top speed, he told us in a recent contact. Steel is already up for the new factory; and work will be carried to completion rapidly.

Going to Washington as part of an Orlando delegation on behalf of them air things they now call "projects," Howard Babcock and A. E. Pickard got busy on the Medfly damage survey bill pending there, just by way of improving their time in the capital. Whether they had anything to do with it or not, the bill got reported favorably out of the House committee during their presence on the spot. Apparently what the Florida citrus business needs is larger, better and more constantly attending growers' delegations at the national capital. Giving due credit to both Hardin Peterson and Mark Wilcox for strenuous efforts on behalf of their citrus constituents, the fact remains that as a whole the Florida delegation in congress shows a tremendous inertia in so far as citrus matters are concerned.

There's that "wine bill" so called, which was made necessary by discovery, when Florida settled down to citrus wine-making in earnest, that Uncle Sam had solemnly decreed a number of things which in effect meant that wine shall be made only of the juice of grapes. Designed to cure some of these downright absurdities, it was necessary for the bill to be drawn in Florida and forwarded to the delegation in congress

in order to stimulate possible action. True the delegation rallied to support the bill. Job of introducing it in the senate went to Sen. Fletcher, while Joe Sears acted as sponsor in the house. Once started, however, its progress seems, to anxiously waiting Florida citrus men, much like that of an ox-cart through an Arkansas cane brake under the guidance of a sleeping dorky. Will the darned thing get through? And, if so, when? Meanwhile a budding industry, which holds absolutely the only promise for the by-products utilization of oranges, lies tied hand and foot.

Given circumstances in which the California citrus industry wanted something which it considered highly important, and it is not hard to imagine what would take place. There'd be a gathering of the California delegation in private with maybe a pep talk. Then beginning next day they'd start splitting both house and senate wide open, with Senator Hiram Johnson breathing down the back of the neck of everybody of importance from the admiral of the Asiatic fleet to the President, and a cold chill following each breath. They'd get what they were after or spoil every other mud pie in congress; and maybe declare a state of national super-emergency in the process.

Florida citrus folks are patient; but they have now watched the California delegation not only dominate but practically control the AAA since its inception. They've seen New Yorkers sent in to control Florida FERA here; and a lot of other things happen which breed suspicion that Florida somehow simply doesn't count. Now, bumping against these federal regulations and restrictions against citrus wine making which somehow had been slipped over while apparently Florida slept, Floridians are beginning to wonder if that thing they feel isn't what Elbert Hubbard used to call, "a distinct and localized pain?"

Glad that guy Prof. E. L. Lord doesn't write for publication in a personal vein. A few years back we recorded something of his fondness for ice cream and messy sundaes. Recently he strolled into a drug store and caught us sitting down appreciatively before a tremendous and awful mess of ice cream, whipped cream and what have you in a very tall glass. What a wow he could have

gotten out of that if he'd had the facilities to pay off in kind.

When the Lord person and this writer foregather, if time permits, there usually ensue some of the longest and windiest arguments since pre-Civil War days when Lincoln and Douglas used to wander around and argify with each other. This has been going on now for the longest time, with perfect good feeling and even affection, but to date neither has ever convinced the 'tother of anything. Of course, once in a while we do agree upon something, maybe just to surprise each other.

Next to Prof. Lord we get the most fun out of discussions with C. D. (Charley) Kime. Both have the same tendency to take refuge in slinging flocks of highly technical phraseology about whenever we have the fortune to press a point with any danger of winning. Now with the ordinary run of folks a lot of language which they do not at all understand may have the effect of silencing them, but not us. A faint, just a very faint, smile of derision at the proper point will save a lot of words, particularly if one doesn't happen to know the proper words. Sometimes we wonder if

## Frank Kay Anderson

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these technical sharks really understand the involved and important sounding phrases they use so liberally when argument gets warm; but we have no way of finding out. Yes, Charlie Kime puts up a pretty good horticultural argument; but he hasn't Lord's endurance. Very recently Charley invited us to go see some work in a grove following one of our discussions, and in the car he was practically silent. Either had despaired of getting us to understand, or was all talked out.

J. Reed Curry of Tampa, in charge of the Exchange's organization work, out and about actively, and looking, after his considerable illness, really better than for a good many years past. Turned not only vegetarian but practically herbivorous too. After seeing what he did recently in a restaurant to what looked like a floral offering, we certainly wouldn't trust him alone with a bale of hay.

Quite complimentary to J. C. and S. O. Chase the article in an Orlando newspaper recently concerning their origination, fifty years ago, of the idea of a canal to connect the St. John's rivers; and how they very nearly did it by means of mules and scrapers before the intent became known, when certain powerful interests induced the War Department to forbid the project.

And Miss Sophie Grundler of S. J. Sligh & Co., Orlando, whom we once referred to as one of the best "fruit-men" in the state, now functions as a director of the Greater Orlando Chamber of Commerce— not such small recognition in her own home town.

One of the real pioneers of Merritt Island passed recently with the death of R. J. La Roche of Courtney at the age of 84. Born in Charleston, S. C. he came to this section of the East Coast as a young man with his six brothers, four of whom survive him. He planted one of the very first citrus groves on the northern part of Merritt Island; and was the owner of extensive citrus acreage there at the time of his death.

Will of the late James Laughlin 3rd., who died recently at Zellwood, left the sum of ten thousand dollars to "William and Isobel Edwards." Mrs. Edwards therefore will come in for the bequest.

Credit C. R. Pilkington of the AFG offices at Orlando for incubating that scheme for moving the state capital to a site all its own close to the geographical center of the state. Something more than four years ago, when a certain amount of loose talk concerning moving the capital was being indulged in, he sat down and worked out in detail a scheme of financing the project by the lease of lands of a townsite which was to be the capital. Then he embroidered it with boulevards, public parking spaces, parks, ornamental plantings and what not. When he got through he had a real idea. Since then he has been working for the AFG rather as a side line, and giving his time to selling his capital removal plan to all and sundry. What's that old saw about throwing a stone into a pool and watching the waves spread?

Vero Beach is going to carry the Indian River's banner into the Canadian National Exposition at Toronto this year. Do not know just how they will provide for citrus displays at that time which will do justice to them; but assume they have worked out a way to take care of that. That Toronto show is away the biggest "fair" of all; and a mighty fine place to put forth Florida's claims to recognition.

Welcome Powell Crosley Jr. the w.k. radio maker, and owner of the Cincinnati "Reds," into citrus circles. He recently purchased a big grove near Dunedin. By the way, how many know that when they were young fellows Powell Crosley Jr. and C. A. (Dixie) Kuhr, once of Lakeland but latterly of Orlando, were business partners in the auto accessories manufacturing business in Cincinnati? Dixie sold out his share and came to Florida, and the business later grew into one of the world's biggest radio factories.

All this talk, and even the news reels, of western dust storms didn't quite click with us. Until word came that the nephew of a friend driving back from California had been caught in one in Kansas. Being ignorant of the technique in such cases, he had kept on driving. The result, illness from pneumonia in a hospital far from home; and then news of his death there.

Remember the one about the guy who committed suicide? How he'd been unpopular? How his friends fin-

ally brought themselves to tell him? How his operation for halitosis had been a success; but how even with the halitosis gone he found he still lacked popularity, so he just shuffled off? Well, while we personally have no intent of doing anything to stimulate the undertaking, pardon, mortician, trade, we are wondering about one significant omission in our own life. Is it unpopularity? Is it repute for being unresponsive? What is it, we wonder? At any rate we'll claim credit for the distinction which this omission gives. Maybe they'll write it into our epitaph, that we are the guy who didn't get even a single chain letter.

#### LEADING FARM GIRLS AND BOYS TO ATTEND JUNE SHORT COURSES

Around 500 of the outstanding 4-H club girls in Florida are to gather at the State College for Women June 1 to 8 for their annual short course, it was announced recently by Miss Flavia Gleason, state home demonstration agent. A similar course for the boys will be held at the University of Florida in Gainesville, beginning June 10, under the leadership of R. W. Blalock, state boys' club agent.



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# The Relations of The State Plant Board With Industry of Florida

BY HON. GEORGE H. BALDWIN

CHAIRMAN, STATE PLANT BOARD, AT MEETING OF THE FLORIDA  
STATE HORTICULTURAL SOCIETY

I accepted the very gracious invitation of your Secretary to appear on your program here today with considerable trepidation for to one who is not engaged in Horticultural work the word "Horticulture" takes in such a large and complex field that I felt I might have very little of any interest to say. I find, however, that whether you are scientists or not you all appear to be very human and have been exceedingly cordial in your greetings to me. I come to attempt to express to you possibly very inadequately, but none the less most sincerely, the view of the gentlemen who form the State Plant Board and hope that from this appearance you will see that we are also very human. The members of the Board feel very deeply the responsibility resting on our shoulders when one realizes that the welfare of the entire agricultural industry of this State may be jeopardized by lack of interest or neglect of our duty and it makes us take these duties very seriously. This is borne in on us by the fact it is estimated that the capital investment in agriculture in Florida is in excess of \$1,000,000,000. Of this of course the probably \$500,000,000 in citrus is by far the largest item, including groves, packing houses, crate mills, canning plants, machinery and other accessories. There are other items however of large figures such as the \$3,000,000 production of our nurseries, the nearly \$27,000,000 value of vegetables, the \$47,000,000 of fruits and nuts for the year 1929 according to the U. S. Census Bureau and the estimated gross return of nearly \$53,000,000 for the 1929-30 citrus crop. Gentlemen, I assure you that we take our responsibility for this great industry and to you as fellow citizens very seriously.

The duties of the State Plant Board as we see them are first to hold to a minimum loss due to pests which are already here and, second, to prevent introduction and dissemination of additional pests.

To carry out these duties we, and

our predecessors in office, have tried since the formation of this Board to make as few rules and as simple rules as possible; to set up an organization of as few individuals as possible but to pick for that organization men who not only have the necessary technical training but who have the judgment to properly apply the rules; and finally to insist that our rules be lived up to by everyone without fear or favor.

We believe we have a courteous, loyal and capable organization from Dr. Newell down to the newest inspector and I can truthfully say I have never personally seen a better morale in any organization with which I have ever been connected.

Of course a great part of our work is in the nature of police work. This of itself will certainly from time to time make us very unpopular with those who are not willing to cooperate in our work for the benefit of the whole. If I think the speed limit in my home town is too low, or if I think I have a good justification for exceeding it, or if I just don't care, and am pulled in by a speed cop for not conforming to the speed limit rule, that cop, the police judge and the City Council are all very unpopular with me for the time being and until I can make up my mind that at least each one was trying conscientiously to do his duty for the good of the greatest number. I hope you will believe me when I assure you that that last purpose is the motive actuating this Board and all our employees.

In the case just cited, I may want to discuss with the policeman as to whether he might not be mistaken as to the speed I was going. Our inspector must always be ready to talk with any of you as to whether or not you are violating a rule and as to how best and easiest for you to correct the violation.

I may want to discuss with the judge the question as to whether I did not have an excuse for going too fast or whether the law is unconsti-

tutional. Our heads of departments, and Dr. Newell himself, must always be ready to discuss with any of you any facts as to the reasonableness of the application of the rule to your case.

I may want to go to the City Council to discuss with them the desirability of the law and whether there should not be some changes in it. The State Plant Board is always glad to have any of you write to us or meet with us and find out our reasons for making any rule that we promulgate and help us if you disagree with what we have done by giving us your reasons for thinking so.

We must many times make rules which might not be necessary if we had only our own local conditions to consider. We know on the other hand that if we don't make and enforce these rules that the Federal Department of Agriculture will place another embargo on the shipment of certain classes of our agricultural products. Or we are put on notice by one or more of our sister states that they will not allow shipment of certain products into those states. We know that not for our protection but for that of other states nursery stock, bulbs, their products and now potatoes must be certified as being free from pests of either insect or disease variety or they cannot be received in one state or another. Then we have similar rules as to shipment of many products of agriculture into Florida for the very definite protection of each of you engaged in that pursuit, having money invested in it or just being a citizen of this State for the welfare of all of us is very directly tied to your industry.

Since the establishment of this Board in 1915 through our internal quarantine work we have entirely eliminated, or practically so, several pests some of which were here at that time, some of which have come since then despite the best of our efforts to prevent. Our climate induces pests of many kinds, our nearest neighbors

May, 1935

— both domestic and foreign — have many pests which could easily gain a foothold and do untold damage to us.

Even if we as sensible individuals were willing to follow the lead of the ostrich and put our heads in the ground and say, "There are no plant pests in Florida", and if by saying this we could eliminate any damage to our agriculture we would be just as badly off for as shown the Federal Government or our sister states would say we believe you have and therefore you can't ship or sell your products.

That protection from pests is an economic necessity for survival of Agriculture is evidenced by the estimates of competent authorities that the yearly losses in this country from plant pests run from \$1,500,000,000 to \$2,000,000,000. Furthermore, the American farmer pays each year \$37,000,000 for insecticides and other spray material. These figures for Florida alone are not available but I feel sure they would sum up to startling amounts and certainly justify the small sum of money provided for the expenses of the work under our Board, and the inconvenience and annoyance and possibly even losses to some of you at times.

Let me give you just a few facts regarding the details of our work. It is divided into five major divisions as follows:

- Grove inspection
- Nursery inspection
- Quarantine (Transit) inspection
- Apiary inspection
- Entomology

Then we are carrying out at the present time four special activities:

- West Indian Fruit Fly Eradication
- Black Fly Eradication (both at Key West)
- Pink Bollworm eradication
- Irish Potato Certification

We have a schedule at present calling for inspection of all citrus planting once in two years, a frequency very close to the danger line for the twenty-six and a half million trees in the state.

We inspected last year the 1819 nurseries an average of 4.3 times. Our quarantine forces during the fiscal year ending June 30, 1934 inspected 6000 ships upon arrival from foreign ports and well over 1000 airplanes and during the quarter ending December 31, 1934, 527,000 parcels from foreign countries. Each ship, each airplane, each passenger and each parcel is a potential carrier of plant pests.

## THE CITRUS INDUSTRY

Since the establishment of our Department of Entomology in 1915, it has handled and recorded close to 55,000 different kinds or species of insects.

I have run the risk of boring you with the few statistics to attempt to give you a clear picture of the scope of the work which is being done from one end of our state to the other by our force of only 65 men.

Our appropriation for the fiscal year 1933-34 was \$194,000, of which by the exercise of the utmost economy because of the condition of the State's finances we only expended \$182,000. In making this reduction, however, we have curtailed temporarily what we consider essential services. In our judgment it would be dangerous to the agricultural industry of the State to continue this curtailment any longer and have asked for a sum of \$210,000 per year for the next biennium. The Budget Commission has recommended to the Legislature a budget of \$194,000. The members of the Plant Board feel that it is essential to have the amount asked for and we trust that the Appropriation Committee of the Legislature will see fit to restore the appropriation to that figure.

In closing, let me repeat that the Board realizes its responsibility and is doing its conscientious best to protect the agriculture of the State. We, however, realize we may make mistakes. We call for your wholehearted cooperation with us and urge you to give us an opportunity to explain by word of mouth to you our reasons for actions which we take before you condemn us too severely. We also urge you to give us the benefit of your knowledge and experience in carrying out the very complex duties devolving upon us. We invite you to meet with us at any of our monthly meetings and would be glad at any time to make special appointments for such meetings. Let me again thank you for your courtesies to me here today.

## SPRAYING FOR THE CONTROL OF CITRUS SCAB

(Continued from page 9)

sprayed in 1933, were again sprayed experimentally in 1934. The trees in three plots received a 3-4-50 bordeaux mixture with one percent oil added, just before the spring growth appeared. In one plot, no further fungicides were applied but an application of oil emulsion was made in June for the control of purple scale.

Seventene

A second plot received a 1-40 liquid lime-sulfur spray in the last of the bloom, and this application was repeated twenty-four days later. The third plot was sprayed on the same dates with dry lime-sulfur 5 pounds to 100 gallons plus Kolofog 2 pounds to 100 gallons. No oil emulsion was used after the bloom in these two plots. When the records of scab infection on the fruits were taken, approximately 20 percent of the fruits from unsprayed trees were blemished by scab. The control of this blemish in all three sprayed plots was nearly absolute. A scale count made in December from all the plots showed that the control of purple scale was as good in the trees receiving two sulfur sprays as in those sprayed with the oil emulsion.

In collaboration with Mr. W. L. Thompson, an experiment was carried out at the Inslee grove, near Bradenton, for the control of red and purple scales after scab control measures had been applied. The experiment included twelve plots, each consisting of 28 grapefruit trees of a seeded variety, which were ten years of age at the beginning of the experiment. In ten of the plots, the trees received a dormant application of either bordeaux-oil emulsion or bordeaux mixture plus a caseinate spreader. Certain of these plots were sprayed after the bloom with oil emulsion, while others received three applications of various combinations of sulfur sprays for scale control. No records of scab control on the fruit were made, because a light bloom appeared in only a few scattered trees in the entire planting. Some interesting data were secured on scale control following the use of bordeaux mixture. These results will be discussed later in the program by Mr. Thompson.

At Lake Alfred, an organic mercury oil emulsion, containing phenyl mercury oleate as the fungicide, was tried out for scab control on infected Samson tangelo and King orange trees. Two applications of this spray at 1 to 60 dilution gave practically no reduction of scab blemish. Both the sprayed and unsprayed trees were severely infected. Basic copper sulfate was also tested on the same varieties. This powdered form of copper was applied at the rate of three pounds to 100 gallons of water with calcium caseinate added. Two applications of this material. The first made just before the spring growth started, and the second made in the last of the bloom, gave excellent con-



trol of scab blemish on the fruit. No injury resulted from either application.

The experiment at Vero Beach was carried out in the same grove used in 1933, but the number of plots was increased to eleven, consisting of 36 trees each. An opportunity was presented to further observe the residual effect of the spraying done the previous year.

The final records of the control of scab blemish on the fruit were taken June 8. On this date the fruits were practically all well past the susceptible stage for scab infection. In order to determine whether the fungicides applied for the control of scab were effective in reducing melanose blemish on grapefruit, 1000 matured fruits were examined from each plot in November, and the degree of melanose blemish was determined by counting the number of melanose lesions per square inch field from the upper half of each fruit. The scale count from leaves collected from all the plots was made late in October.

The spray formulas, with the dates of application and the results of the examinations made to determine the amount of scab and melanose blemish and the number of living scale insects per leaf, are recorded in Table I.

The unsprayed trees in Plot 1 became very severely infected with scab and melanose. Of the 1000 fruits examined, only 31 were free of scab blemish. Approximately 30 percent of the fruits were classified as lightly infected in the melanose examination.

Two applications of basic copper sulfate to Plot 2 gave as good control of scab and melanose as two applications of bordeaux to Plot 3. The basic copper sulfate combines readily with an oil emulsion and is much easier to mix than bordeaux. Since it is not necessary to add lime to it, there is very little visible residue on the foliage after its use. An injury to the foliage in the form of "star melanose" followed its use in this plot. This injury was not serious and is frequently observed after bordeaux or other copper sprays are applied to grapefruit foliage.

The control of scab and melanose in Plots 7, 9, 10, and 11, was practically the same, and the slight differences may be attributed to experimental error. The control obtained in these plots evidently resulted entirely from the dormant spray, because it was as good in Plot 11, where the dormant spray was not

followed by other fungicides, as in Plots 7, 9, and 10, where sulfur sprays were applied after the bloom.

In Plot 8, where lime-sulfur plus bentonite sulfur was applied to trees which had received two sprayings of bordeaux mixture in 1933, the control of scab was excellent, only 6.4 percent of the fruits being infected. The melanose control secured by this combination was very slight, however.

In Plot 4, the Bordol-Mulsion, which is a proprietary copper-oil emulsion spray sold as a substitute for home-made bordeaux-oil emulsion, did not prove as effective as the latter for the control of either disease. Neither of the mercury oil emulsions used in Plots 5 and 6 gave commercial control of scab or melanose.

Red and purple scales increased during the season in all plots including the check. This increase was least in the trees sprayed with the mercury emulsions, in the bordeaux plot receiving three post-bloom lime-sulfur sprays and in the unsprayed check trees. It was highest in Plots 2, 3, and 11. Two post-bloom applications of lime-sulfur after dormant bordeaux gave as good control of scales as a 1 percent oil emulsion applied in June.

#### Conclusions

The results of these spraying experiments show that scab can be effectively and economically controlled in most cases by spraying. Copper sprays have consistently given better control of the disease than the sulfur and mercury fungicides. Of the copper sprays thus far tested, home-made bordeaux mixture appears to be the most reliable and effective fungicide.

Basic copper sulfate has given as good control of scab as bordeaux mixture in the experiments of one season, but more data are necessary before it should be recommended for general use as a substitute for bordeaux. Bordol-Mulsion, a proprietary copper-oil combination sold as a substitute for home-made bordeaux-oil emulsion, is less effective than the latter for the control of scab. Both the basic copper sulfate and the Bordol-Mulsion leave less visible residue on the foliage and have given less trouble in promoting scale increase than bordeaux mixture.

If scab is expected to be severe, it is advisable to make two applications of bordeaux. The first spray should be applied at 3-3-50 concentration just before the spring growth

starts. A suitable spreader, such as a  $\frac{1}{2}$  percent of oil as an emulsion, should be added and an attempt made to cover all the old scab lesions on the foliage. The second application should be made in the last of the bloom, using a  $1\frac{1}{2}$ -1-50 formula, with a suitable spreader added. This should be followed in June by an oil emulsion for scale control.

There is a marked reduction in the amount and severity of scab infection the year following this program, without further sprays being applied. Commercial control of scab may be obtained the second year by making a thorough dormant application of bordeaux mixture with spreader added, and omitting the bloom spray. This program is also recommended for the control of mild cases of scab infection in trees not sprayed the previous season for this disease.

When copper sprays are effectively applied for the control of scab, the amount and severity of melanose blemish on fruit and foliage is materially reduced.

Lime-sulfur sprays strengthened by adding Kolofog or wettable sulfur, and organic mercury emulsion may be used to prevent mild cases of scab from increasing, but these sprays give less reduction of melanose blemish than the copper sprays. In cases of mild infection, where the scale infestation is very heavy, and where it is desired to control red spider or rust mites on late fruit, one of these sprays should be applied instead of the bordeaux mixture.

When a dormant application of bordeaux mixture or bordeaux-oil emulsion has been made for the control of scab, and the scale infestation is slight, the control of these insects may be secured by the use of an oil emulsion spray in June, or by the application of three lime-sulfur sprays properly timed. The first of the lime-sulfur sprays should be applied in or shortly after the last of the bloom at 1-40 dilution, the second at four to six weeks later at the same strength, and the third may be applied whenever necessary for rust mite control. Dry lime-sulfur with bentonite sulfur added, may be substituted for the liquid lime-sulfur in this program.

Detailed Soil Analysis and Interpretations, Estimation of Plant Food Requirements and Soil Toxins.

\$2.50

SOIL LABORATORY  
Frostproof, Fla.

# Quality Crops

## —They Need a Ration of Both Major and Minor Plant Foods



"We're Seven Active Plant Foods,  
The season through we toil,  
To help you with your harvest,  
Likewise improve your soil."

*This year, when Quality  
is so Important  
Rely on Armour's*

## Armour's Seven Active Plant Foods Help "Make Every Acre Do Its Best"

Your grove or field is capable of producing quality crops. But you must realize the necessity of returning to the soil the elements your crops take out . . . not just one of them, but all of them. That's why it's so important to use Armour's . . . the fertilizer with the Seven Active Plant Foods.

Armour's BIG CROP Fertilizers contain more than a carefully selected and balanced ration of the major plant foods. They're also rich in minor or secondary plant foods — elements that are essential to quality crops. And Armour's BIG CROP Fertilizers are made in Florida and made especially for Florida soil conditions and crops.

This year, as during the past forty, many of Florida's most successful growers will depend on Armour's BIG CROP Fertilizers to increase yields and put quality into their crops. They know, from experience, that these fertilizers not only feed crops but that they actually improve soil. Follow their example this year. Use Armour's . . . the fertilizer with the Seven Active Plant Foods.

Prices Now on a Delivered Basis.  
ARMOUR FERTILIZER WORKS  
Jacksonville, Florida



**SEVEN ACTIVE PLANT FOODS**

### FINDINGS ON GROVE COSTS AND RETURNS

(Continued from page 5)

supervisory endeavor. When these items further have been deducted, the remaining balances, if any, can be counted as operating profits.

Valuation of the groves ten years or less in age averaged \$433 per acre and that of the holdings of greater age than ten years reached an average of \$605 an acre, according to the appraisals of the owners or operators.

Summary of costs and returns on the 264 properties, figured per acre, for the crop year 1932-33, is as follows:

Item	10 Years & Under	Groves Over 10 Years
Number of Groves	82	182
Total Acres of Groves	3,210	6,269
Average Acres per Grove	39	34
Value per Acre	\$433	\$605
Average Age	8	17
Number of Trees per Acre	63	58
Percent Trees Grapefruit	28	32
Boxes Harvested per Acre	55	92
Costs per Acre:		
Labor, Power & Equipment	\$12.50	\$19.46
Fertilizer	11.30	17.73
Spray & Dust Material	1.27	3.13
Taxes	3.00	5.10
Miscellaneous	.64	1.81
Total Costs Excluding Interest & Depreciation	\$28.71	\$47.23
Total Returns per Acre	44.62	68.21
Net Returns per Acre for Interest & Owner's Supervision	15.91	20.98
Total Cost per Box Excluding Interest & Depreciation	\$ .52	\$ .51
Total Income per Box	.81	.74
Net Income per Box for Interest & Owner's Supervision	.29	.23

#### "Break-Down" of the Results

In a third tabulation is shown the costs and returns by counties for 182 groves over ten years old. Outlay was heaviest in Orange county, \$66.24 per acre, ranging downward thence to \$56.34 for Polk, \$47.97 for Lake, \$40.66 for Highlands and \$39.31 for the miscellaneous territory. Returns also were highest in Orange, at \$112.62 an acre, but Lake came second, with \$90.68, Polk third, \$74.98, miscellaneous fourth, \$60.83 and Highlands last, \$52.51.

Relation of the operating methods to costs was developed in an analysis based on the figures for 148 groves. Under hired supervision separate from operations, the expense was largest, \$25.63 per acre. Supervision employed but included in operations gave a figure of \$20.72 an acre, ownership management furnished the low average of \$14.62 per acre. Factors of an abnormal character influenced some of the findings.

Costs per acre were found to have been highest on groves of twenty years or over, \$66.14 per acre while trees seven to ten years supplied the low figure of \$28.11. Returns likewise

were greatest on the plantings twenty years or more old, mounting up to \$25.79 per acre, and the minimum was recorded for trees under ten years—a deficit of \$6.73 an acre. In all other ages they were above the costs.

Bearing of age on the yield of fruit per tree, both of grapefruit and oranges, is reflected in still another section of the summaries. Prices received per box for the output of the 264 groves is indicated by counties and by varieties, under an additional classification. Plant food applied per 100 trees also has been worked out for 248 groves of the 264 that were studied.

Cost accounts are closed the following year, as of August 31st, and returns compiled the next June.

Copies of the latest summaries and other information can usually be had from county farm agents.

Requests for them also may be sent to the State Agricultural Extension Service, Gainesville.

*Citrus Industry*

### NOW IS TIME TO PRUNE CITRUS TREES INJURED BY LOW TEMPERATURES

Spring growth is becoming hardened on citrus trees, and consequently growers whose trees were injured by the cold weather of last winter are beginning to prune out the dead wood, says E. F. DeBusk, citriculturist with the State Agricultural Extension Service.

He suggests that the prunings be left where they fall, if they are not in the way, since they have some mulching value and it is expensive to remove them. It has been found that dead wood which is pruned off and left under the tree does not spread melanose infection, Mr. DeBusk says.

Pruning cuts more than an inch in diameter should be covered with waterproof paint or other wound dressing to prevent cracking and drying back, Mr. DeBusk cautions. He says that tree wound dressing materials which can be used are numerous. Asphalt roofing paint has been found satisfactory. The wound dressings should be applied soon after the cuts are made.

With hardened spring growth, the dead wood is clearly marked and its removal is not difficult. Care should be exercised not to break or destroy the new growth.

There were 1,750,000 tourists who visited Florida during the winter of 1934-35, according to estimates. They spent \$625,000,000 while in the state.

Summary of costs and returns per acre on 65 groves for a three-year period is a concluding feature that will be found of major interest. Costs on an acre basis are shown to have been reduced from \$75.99 in 1930-31 to \$61.17 for 1932-33 and per box from 60 cents to 50 cents. Returns were greater in 1933-34 than for the season before but less than during 1930-31.

Table below contains the three-year findings on the 65 groves for which the figures are available.

Item	1930-31	1931-32	1932-33
Yield per Acre	126	126	121
Costs per Acre:			
Labor, Power & Equipment	\$32.62	\$29.00	\$27.22
Fertilizer	29.41	24.28	22.50
Spray & Dust	4.01	3.59	4.09
Taxes	7.88	6.02	4.94
Miscellaneous	2.67	1.86	2.42
Total Cost per Acre Excluding Interest & Depreciation	\$75.99	\$64.75	\$61.17
Total Returns per Acre	109.34	53.35	80.42
Net Returns per Interest & Owners Supervision	33.35	-11.40	19.25
Total Cost per Box Excluding Interest & Depreciation	\$ .60	\$ .51	\$ .50
Total Income per Box	.87	.42	.66
Net Returns per Box for Interest & Owner's Supervision	.27	-.09	.16

Grove record books are distributed to cooperating growers during August and September of each year.

Raw vegetables and fruit salads are rich in vitamins.



## How Rail Lines Can Aid Citrus Consumption

In connection with the many plans and theories advanced by agencies and individuals throughout Florida in recent months pertaining to the proper advertising of Florida citrus fruit, George T. Tippin of Vero Beach, one of the state's outstanding leaders in the citrus industry, as a grower, fair exhibit manager and marketing expert, comes forth with a plan whereby the cooperation of rail lines in the state and their connecting lines is urged.

Mr. Tippin suggests that rail lines lend their active cooperation through the medium of their dining car service, whereby Florida citrus fruit may be served to dining car patrons at rock bottom prices or gratis.

In an interview with Mr. Tippin he had the following to say of his plan:

"From all that is being said and written about advertising Florida citrus fruit it seems that most everyone interested in citrus growing appreciates the importance of advertising.

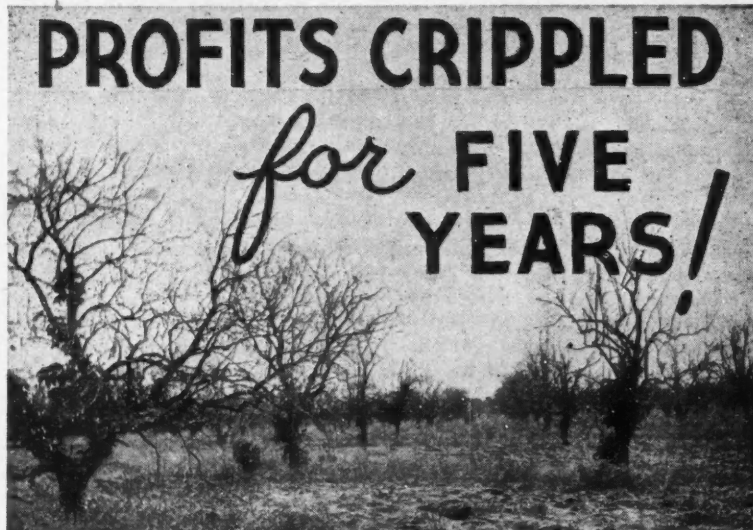
"In this advertising campaign we should not overlook the fact that the placing of publicity before the consuming public does not of itself insure satisfactory results. If the intervening expense between a profitable price to the grower is so great that the price at the consumer end is so high that it will not go into consumption, the market is destroyed, although the consumer knows all about the large crop of quality Florida citrus fruit.

"That the best returns possible come from an advertising campaign of any kind it becomes necessary to remove all the obstructions along the line that hinder proper distribution.

"The cooperation of all interests and agencies that enter into the problem of distributing and marketing citrus at a price that will give the grower a reasonable profit, is necessary.

"The citrus grower does not receive the concrete results from his advertising that the manufacturers do, who fix the price of their product at the consumer end. The citrus grower will not be in position to fix the price of his product, until by solving the problem of distribution, he has

(Continued on page 25)



**PROFITS CRIPPLED  
for FIVE  
YEARS!**

Over night, killing cold robbed many Florida growers of anticipated profits last December. In some sections groves were so badly damaged they will not be a source of income for at least five years. Perhaps you were one of the fortunate growers whose trees, because of more favorable location, were not seriously affected. Your fruit brought higher prices. Your profits should be greater next year unless a freeze should strike your grove. Why not give your fruit and trees permanent protection against freezing temperatures with HY-LO heaters?

### HY-LO Heaters Are Safe, Efficient, Economical

HY-LO heaters will give you the kind of heat you need—and do it economically. They are easy to light, simple to regulate, and distribute heat efficiently. Millions of round bowl type heaters have been manufactured by the American Can Company and used with complete satisfaction. They have become the standard in California where many have served for more than 20 years.

### Hot Dipped For Greater Durability

The 9 gallon, round bowl type heater shown in illustration is especially durable. The seamless bowl is made of 24 gauge black iron and galvanized by the hot dipped process. This adds a very heavy coating of galvanizing which resists rust and high temperatures. The absence of folds and seams reduces capillary attraction to a minimum.

### Heaters As Low As 45c Each

HY-LO heaters are manufactured in several types and sizes priced from 45c each up. All HY-LO heaters are shipped direct by manufacturer to grower. Mail coupon below for illustrated booklet, prices and free demonstration at your grove.



**LEMORA SPIRAL  
ACTION HEATER**  
For citrus. Especially clean  
burning stack producing  
very intense heat. Except-  
ionally free from smoke.  
Capacity 9 gallons

*Mail  
Coupon  
Today*

American Can Company  
Citrus Exchange Bldg., Tampa, Fla.  
Without obligation to me please arrange for a free demon-  
stration of your HY-LO heaters at my grove.

I have \_\_\_\_\_ acres in oranges; \_\_\_\_\_ acres in grapefruit;  
\_\_\_\_\_ acres in limes; \_\_\_\_\_ acres in vegetables.

NAME \_\_\_\_\_

STREET No. or RFD. \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_

**AMERICAN CAN CO., Orchard Heater Dept.**  
Citrus Exchange Bldg. Tampa, Fla., W. C. Scheu, Mgr.

DISTRIBUTED IN FLORIDA BY

**GULF FERTILIZER COMPANY - TAMPA, FLA.**

# INTERESTING NEW USES OF SOLUBLE BORATES IN THE PACKING HOUSES

(Continued from page 7)

solubility and other properties. This material is now being produced and marketed under the name of "METBOR."

Commercial production and sale of "Metbor" was not started until its effectiveness had been thoroughly demonstrated. Its performance has been notable in one of the largest packing houses in the state. The decay record of the house in question was none too good, but the consistent use of Metbor solutions, used in place of water in their light fruit separators, and in the soaktanks, has reduced their decay losses to a negligible figure. In fact, the operation over the last ten weeks has shown a reduction in decay of well over 90% as compared to the preceding ten weeks record.

The principal ingredient in Metbor is sodium metaborate, which is made from borax. The composition has been somewhat adjusted to meet the requirements of economical production and most satisfactory properties for packing house use. It is quickly and completely soluble in cold water to concentrations even greater than are necessary to gain the equivalent of an 8% borax solution. All tests which have been reported have indicated that boric oxide content of borax, or other borate compounds, is the chief determining factor in control of decay. Cold solutions of Metbor containing boric oxide equivalent to that of 8% borax have been found fully as efficient as the warm solutions of the latter.

This new material possesses none of the objectionable qualities of borax. As no heat is required to keep the necessary concentration in solution, a saving in fuel is affected, and there is no tendency whatsoever toward crystallization. The mixing of solutions in the tanks is easily and quickly accomplished. There is not the marked and objectionable odor which develops in borax solutions, for Metbor solutions stay "sweet"

## HAYFEVER

ASTHMA and SUMMER COLDS are unnecessary. Complete relief only \$1 Postpaid. Nothing else to buy. Over 40,000 HOLFORD'S WONDER INHALER sold last year alone. Mail \$1 today for full season's relief to THE DANDEE CO., 252 Hennepin Ave., MINNEAPOLIS, MINN., or write for Free Booklet.

during long periods of use.

One of the most interesting uses for Metbor, under conditions existing this season, is in connection with handling frost damaged fruit in light fruit separators. Practically all marketable fruit has been affected to some extent by the freeze, about which I am sure you have all heard, and certainly requires the protection of a borate treatment. Most packing houses have installed these separators, but few of the tanks are equipped with heating coils. In any case the large volume and rapid circulation of the liquid would entail a heavy fuel cost to maintain the temperature necessary to hold 8% borax in solution. Metbor solutions have been successfully used in separator tanks, and have made it possible to combine effective separation of frosted fruit with effective control of decay in the marketable fruit.

In addition to the desirable properties I have mentioned, the composition of Metbor makes it a very efficient cleaner. Its use in the soak tank gives the combined advantages of effective cleaning and additional borate protection. As most houses which installed color processes have been forced, by need for space, to remove the second borax tank (following the scrubbing brushes) in which heretofore warm borax solutions have been used, the introduction of a borate into the first tank overcomes the deficiency.

## THE EFFECT OF FREEZING ON ORANGES

(Continued from page 3)

times been used in studying the Vitamin C content of citrus juices. This method indicates that there is no loss of Vitamin C from oranges as a result of freezing or changes taking place within a reasonable time after thawing. In testing oranges naturally frozen, no reduction in Vitamin C, as determined by this method, could be noticed.

A question of vital importance regarding frozen oranges is whether or not the eating of such fruit is detrimental to health. For a while there were a number of reports that eating frozen oranges had made people sick. The harmless effect of eating frozen oranges was demonstrated as follows: Valencia oranges were picked on February 7th, frozen artificially over night, and then kept

IF suffering with Piles, I want to help you. Drop me a line explaining.

Fred C. Whitney

317 6th Ave., Des Moines, Iowa

at room temperature for three days. These fruits then bore the usual signs of having been frozen. One volunteer drank as much juice from these fruits as contained in three average sized oranges, another as much as in two, and three others as much as in one orange each. None of these people had any digestive disturbance as a result of this experiment. For some time a firm in the North sold frozen orange juice for home use. There is no evidence that this juice made anyone ill because of its having been frozen. Since December 1934, I have talked with a number of people who have knowingly eaten frozen oranges and they have declared that eating such fruits had no ill effect on their health. There are many others who have been eating frozen oranges, without realizing that they had been frozen, and yet there seems to be no complaint that they have been made sick from eating these oranges. Of course, in these cases, the instances where decomposition had set in are excluded.

It has thus been shown that freezing does not in itself make oranges detrimental to health. It was also shown that freezing does not decrease the food value of a given amount of orange juice. However, the total amount of juice per fruit was shown to be lowered. To offer dry oranges to prospective purchasers is a deception, for Florida citrus fruit is expected to be juicy. Tests made in the Citrus Inspection Bureau Laboratory have indicated that oranges containing less than 43% juice by volume, when the juice is determined by hand squeezing of unpeeled fruits, are unduly dry. Therefore, should it be desirous to enact some regulatory measure for the shipment of frozen oranges, it seems that the most practical standard should be based on the juice content. Having such a standard the growers could ship a large portion of their oranges affected by freezing without putting any bad fruit on the market.

## J. F. AHERN

Consulting Engineer

Specializing In

Diesel, Electric and

Hydraulic Engineering

Phone 7-4755 2365 Post St.

Jacksonville, Florida

## Vagrant Musings

### Glints From the Old Man's Observatory

Wisdom is that element which enables us to profitably apply learning.

Not all girls are gold-diggers—some are content to dig for dimes.

Even the man who talks little sometimes talks too much.

No organization can long exist with a broken cog or a wobbly drive wheel.

Men usually make the budgets, but it takes a woman to live within one.

When people "get on our nerves" the trouble usually is with our nerves—not with the people.

The confirmed snooper and the confirmed gossip are natural pals; without the snooper, the gossip would lack material, and without the gossip, the snooper's material would be harmless.

There is a vast difference between being "crazy about a man (or a girl)" and being man (or girl) crazy.

Our colored maid says: "The men who are good to you won't work, and the ones who work best beat you."

Woman's first argument to win a favor is a smile; her second, cajolery; her third and final,

## THE CITRUS INDUSTRY

tears. When all three fail, she ceases to argue and begins to fight.

The trouble with many of our lawmakers is that they are too familiar with the process of breaking or evading the law.

The only trouble with a lot of popular truisms is that they are not true.

For instance—there is that one to the effect that "what we don't know, don't hurt." As a matter of fact it is what we don't know, but suspect, which hurts the worst.

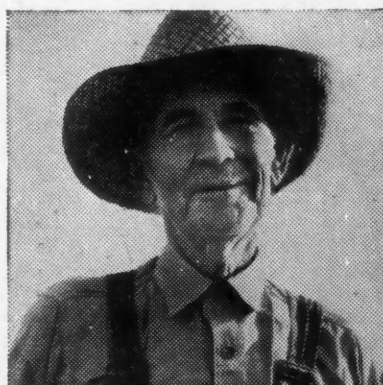
## Twenty-three

And that one about "sparing the rod and spoiling the child." More children have been spoiled by senseless application of the rod than by withholding it.

And then there is that one about "early to bed and early to rise," when all of us know people who are ardent disciples of that creed who are neither "healthy, wealthy nor wise."

One of the penalties of greatness is that of being always in the spotlight; when a Babe Ruth or a Will Rogers makes a mistake, the whole world sees it.

## "AN' BE SURE IT'S NATURAL"



### You can trust NATURE every time

It is amazing the way Mother Nature does everything right, if you give her half a chance.

When she created Chilean Natural Nitrate, she put into it the many vital impurities that we now know are as important as the nitrogen itself. She used these rarer elements, not by "guess", but in her own wise balance and blend.

Use Chilean Natural Nitrate. Its balanced impurities are to

your trees and truck crops what vitamins are to your children. This season more crops than for many a year will be side dressed with Chilean Soda—the only nitrogen that comes from the ground.

For your own protection say "Chilean" when you order nitrate. It is the only nitrogen that comes from the ground . . . and it has those vital impurities.

## C. D. Kime

Consulting  
Horticulturist

Grove Advisory Service,  
Soil Investigations,  
Research.

P. O. Box 222  
Phone 3489  
ORLANDO

## Chilean NATURAL NITRATE

THE OLD ORIGINAL SODA



## "Emergency" Loans To Growers Now Available

Washington, May 16—(Special)—Following weeks of almost daily conferences by Congressman J. Hardin Peterson with officials of the farm credit administration, a plan for assisting citrus growers to rehabilitate their groves by the December freeze has been worked out and goes into effect immediately.

The plan as finally adopted was consummated after conferences with Florida growers and prominent citrus factors headed by C. W. Lyons of Tampa who made numerous trips to Washington in behalf of the measure and to whom much credit is due for its acceptance by the administration.

The loans will be made for fertilizing, spraying, dusting, or pruning citrus trees. The loans must be made prior to June 30, however, and because of this restriction in time, Congressman Peterson literally "parked on the doorstep" of the farm credit administration here in an effort to expedite compilation of the necessary rules and regulations. He was notified within five minutes after they had been signed by W. I. Myers, governor of the farm administration, and the regulations were immediately sent by airmail to the Memphis regional office of the emergency crop loan division from where the necessary mortgage forms, applications and other papers will be distributed.

These are strictly "emergency" loans, however, and if a grower can obtain assistance elsewhere, he will not be eligible. One of the requirements of eligibility is that the farmer try to get his loan through a production credit association, and he must have a written refusal from that organization in order to become eligible for the emergency loan.

The loans will be disbursed through county agents or county loan committees in counties where there are no county agents. The necessary forms should be in the hands of these agents and committees at the present time. Congressman Peterson urged those intending to secure relief through these loans to make application immediately, due to the restriction in time.

Emergency crop loans have been made in Florida each year, but were always of a limited amount. Under the authority of the crop loan act passed early in the present session,

many counties in Florida, including all of those in Congressman Peterson's district, were officially designated as "stricken areas", and this permitted the making of the increased loans over a much longer period of maturity and on easier forms of collateral. Groves on which the trees are shown to be less than 50 percent damaged are eligible. Where a greater amount of damage is found, the farm credit administration has taken the position that the farmer in such case should receive assistance through the rural rehabilitation program, and Mr. Peterson has already done considerable work along this line.

Following is a list of the field supervisors who will be in charge of the

new loans, and persons may communicate with them, or take the matter up with their local county agent or crop loan committee:

Floyd Deen, Fort Myers, covering Charlotte, Collier, DeSoto, Glades, Hardee, Hendry, Highlands, Lee, Manatee and Sarasota counties.

O. J. Roundtree, Ocala, covering Citrus county.

C. C. Roberts, Lakeland, covering Hernando, Hillsborough, Pasco, Pinellas, Polk and Sumter counties.

H. Deal, Box 947, covering Lake county.

Following are the county agents to whom application can be made direct:

(Continued on page 26)

For SAFE, Economical Extra  
Protection for Your Grove . . . use



"True to Label"

### WETTABLE SULPHUR

Build up the sulphur content of summer sprays to maintain effective control of rust mite, red spider and scale crawlers by adding WHITE BAND WETTABLE SULPHUR to lime-sulphur and other sprays. It is pure sulphur with especially processed spreader and sticker—nothing in it to cause burning. Doesn't foul spray tanks. Get fact folder from your dealer. Leading dealers and distributors of quality insecticides carry WHITE BAND products.

**WHITE BAND**  
Superfine  
Dusting Sulphur

gives more "surface exposed" sulphur for quicker fuming, more coverage and control. WHITE BAND Lime-Sulphur Solution is another quality product.

Made in Florida for Florida Growers by

**U. S. Phosphoric Products Corp., Tampa**

### JACKSON GRAIN COMPANY

TAMPA, FLORIDA

Distributors

**WHITE BAND**

"True To Label" Insecticides

**FLORIDA VOLCK**

The Summer Oil Emulsion

May, 1935

## HOW RAIL LINES CAN AID CITRUS CONSUMPTION

(Continued from page 21)

made it possible to establish the price at grove or packing house.

### Rail Lines Cooperation

"In the meantime there are some influences that might be utilized in assisting consumption, establishing a reasonable profit, and greatly aiding the advertising effort that is being made.

"The railroads of Florida are as vitally interested in the success of the citrus industry as any other outside agency. Yet they are not exercising their influence in ways that they consistently could, and which would be very helpful to all concerned.

"This past season, when their dining car and eating house service could obtain grapefruit at 2 to 3 cents each, loaded in their baggage cars along the line, they charged the consumer 30 to 50 cents each by serving a half a fruit for 15 and 25 cents—\$15 to \$25 per box according to size.

"Just think of it . . . Suppose this service had been for 5 and 10 cents . . . on all the trunk lines in their

## THE CITRUS INDUSTRY

dining cars and eating houses consumption would have been increased many fold, besides it would have had the effect of causing other larger restaurants and hotels in the cities, where railroad eating houses are in operation, to cut their service to a reasonable price that would result in a much larger increased consumption.

"I don't know, but I believe that if I had been general manager of a trunk railroad coming into Florida, that owing to the fact we could get grapefruit for practically nothing, I would have decided this was the psychological time to serve grapefruit in the dining cars and eating places free of charge, as an advertising card for the dining car service, a means of helping the grower by increasing consumption, besides the psychological effect upon the minds of the growers, which might have had a highly favorable effect during these times of stress in transportation competition.

"As a general manager of a Florida trunk line railroad, I would have suggested to all connecting line roads that it must be seen to at once that connecting through rates over all connecting lines, by which all car-

load towns can be reached, be established at once, not only in justice to the railroads but as the key to solving the question of distribution in the interest of the grower and shipper, the only possible route to cash sales at grove or packing house.

"No trouble to find cash buyers when the growers are in a position to say to the buyers, that if they buy a car, no car will be consigned to his market against it. There are probably 300 cities east of the Rocky Mountains that would consume a carload of citrus fruit a week that have never received a carload. A city that would overcome a car a week is a carload town.

"Whenever traffic rates are so adjusted that cars can go direct to these cities for a reasonable freight charge, reaching the people at a price they can afford to buy citrus fruit as a healthful food supply, much will have been accomplished.

"These people will not only appreciate having been told through advertising about Florida's fine quality citrus fruit, but the fact that through coordinated effort it can reach them direct in carload lots at a reasonable rate, will have a salutary effect."

Twenty-five



# Fertilize Your Citrus Groves

with NON-LEACHING

## 'Aero' Cyanamid

*in the*

1935 RAINY SEASON 1935						
Sun.	Mon.	Tue.	Wed.	Thu.	Fri.	Sat.
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21

**'AERO' CYANAMID**  
supplies  
non-leaching  
**NITROGEN**  
to feed the tree  
and  
**LIME**  
to sweeten the  
soil



**NITROGEN ALONE MEETS THE REQUIREMENTS FOR ONE APPLICATION PER YEAR**

Citrus groves in Florida require applications of nitrogen, phosphoric acid, and potash. It has been the common practice to apply all three of these plant foods every spring, summer, and fall—three times a year.

The evidence shows that at least one application during the year may well consist of nitrogen alone. Many Florida growers, who now use only Cyanamid for their summer or fall applications, are pleased with the excellent condition of their trees, and also with the cash savings effected.

Applied any time during the year when there is plenty of moisture in the soil, Granular 'Aero' Cyanamid—27 per cent ammonia and 70 per cent hydrated lime—supplies the necessary nitrogen required for tree growth and fruit production, and lime to sweeten the soil. It is not washed out of the soil by heavy rains.

Write for Leaflet X-332 "Fertilizing Florida Citrus with Granular 'Aero' Cyanamid"

**AMERICAN CYANAMID COMPANY**

Manufacturers of 'Aero' Cyanamid and 'Ammono-Phos'

1021 EDGEWATER DRIVE      ORLANDO, FLORIDA

## "EMERGENCY" LOANS TO GROWERS NOW AVAILABLE

(Continued from page 24)

Citrus county, Mrs. E. W. Moore, Inverness; DeSoto county, C. P. Henck, Arcadia; Hardee county, C. E. Baggett, Wauchula; Hernando county, B. E. Lawton, Brooksville; Highlands county, L. H. Alsmeyer, Sebring; Hillsborough county, C. P. Wright, Plant City; Lake county, C. R. Hiatt, Tavares; Manatee county, J. H. Logan, Bradenton; Pinellas county, William Gomme, Clearwater; Polk county, W. Paul Hayman, Bartow; Sarasota county, W. E. Evans, Sarasota.

In counties where there is no county agent, Congressman Peterson suggested that the growers communicate direct with the field supervisor representing that territory.

Mr. Peterson expressed gratification at the outcome of his efforts and said it would produce a form of assistance which would enable many growers to rehabilitate themselves. No type of loan was available which would take care of the situation until emergency proposal was worked out.

Over 23,000,000 acres, or 67 per cent of Florida's land area, is classed as forest land. Less than one million acres are in virgin timber, and more than 10 million acres are not being utilized for the production of second-growth timber.

## PATENTS

Send me sketch, picture, or model of your new invention. I will give you prompt report on its probable patentability based on a search of the patent records for a small charge.

**PLANTS, BUSHES, TREES, VINES, ETC.**

can now also be protected by Patents.

**International Building  
GEORGE E. COOK**

Washington, D. C.

Registered Patent Attorney

## E. L. LORD

Consulting Horticulturist.  
Grove Advisory Service.

Economical, Safe, Effective.  
Why not give your grove a break?

P. O. Box 757

Winter Haven, Fla.

## CLASSIFIED

## Advertisements

The rate for advertisements of this nature is only five cents per word for each insertion. You may count the number of words you have, multiply it by five, and you will have the cost of the advertisement for one insertion. Multiply this by the total number of insertions desired and you will have the total cost. This rate is so low that we cannot charge classified accounts, and would, therefore, appreciate a remittance with order. No advertisement accepted for less than 50 cents.

### PERSONAL

**QUIT TOBACCO** easily, inexpensively, without drugs. Send address. N. A. Stokes, Mohawk, Florida.

**THRIFTY TREES** and budwood from record performance Perrine Lemon parents, Persian Lime and other citrus varieties. DeSoto Nurseries, DeSoto City, Fla.

**CROTALARIA** — New crop, high quality, double cleaned, scarified Crotalaria Striata seed for sale. Attractive prices. Carolinas' Crotalaria Co., Camden, S. C.

**UP to \$20.00 paid for Indian Head Cents:** Half Cents \$125.00; Large Copper Cents \$500.00, etc. Send time for list. Romanocoinshop, D. Springfield, Mass.

**WANTED:** — Good second hand double orange sizer, which will run two cars. Christian & Neal, McIntosh, Fla.

**WANTED**—To hear from owner of land for sale. O. Hawley, Baldwin, Wis.

**ALYCE CLOVER**, the adapted Florida legume for hay or cover crop. Rich in fertilizer or hay value. Pure seed for sale by Hardin Nurseries, Box 63, Lakeland, Fla.

**Large citrus trees** for replanting at special low price. Grafted avocado trees and budwood of Perrine lemon and Tahiti limes.

**WARD'S NURSERY**  
Avon Park, Fla.

**MEN WANTED**—Sell Shirts. No experience necessary. Free samples. Commission in advance. Free ties with shirts. Carroll Mills, 875A Flatbush Av., Brooklyn N. Y.

**FREE Booklet** describes 87 plans for making \$20-\$100 weekly, home or office, business your own. Elite Service, 505 Fifth ave., New York City.

**CLEOPATRA SPECTABILIS**, fresh crop, scarified, cleaned seed; 20c lb; \$17.00 per 100 lbs. Igou-Kauffman Co., Eustis, Fla.

**CLEOPATRA MANDARIN** and Sour Orange root stock. Also Hamlin, Valencia and Persian Lime budded trees. Grand Island Nurseries, Eustis, Fla.

**WANTED**—To hear from owner having good farm for sale. Cash price, particulars, John Black, Chippewa Falls, Wisconsin.

**PUREBRED PULLETS FOR SALE**—White Leghorns and Aconas ready to ship. Barred Rocks and R. I. Reds shortly. Several hundred yearling White Leghorns hens now laying 70%. Write or wire for prices. C. A. Norman, Dr. 1440, Knoxville, Tenn.

**LAREDO SOY BEANS**, considered free from nematode, excellent for hay and soil improvement. Write the Baldwin County Seed Growers Association, Loxley, Alabama, for prices.

**FANCY ABAKKA** pineapple plants. R. A. Saeger, Ankona, Florida.

**FOR SALE**—Selected budwood and trees of Perrine lemon, Tahiti lime, new varieties tangelos and other citrus. Ward's Nursery, Avon Park, Fla.

**DETAILED SOIL ANALYSIS, Interpretations.** \$2.50. Soil Laboratory, Frostproof, Florida.

**SCENIC HIGHWAY NURSERIES**—has a large stock of early and late grapefruit and oranges. One, two and three year buds. This nursery has been operated since 1883 by G. H. Gibbons, Waverly, Fla.

**NEW COMMERCIAL lemon** for Florida, the Perrine; proven. All residents need yard trees, keeping Florida money at home. Booking orders for budded stock for Winter delivery. DeSoto Nurseries, DeSoto City, Fla.

**SATSUMA BUDWOOD** from Bearing Trees. Hills Fruit Farm, Panama City, Fla.

**SEED**—Rough lemon, sour orange, cleopatra. New crop from type true parent trees. Also thrifty seedlings. DeSoto Nurseries, De Soto City, Florida.

**BUDDED trees** new Florida commercial lemon, proven, thin skinned, juicy, scab immune. Also rough lemon, sour orange and Cleopatra seed and liming seedlings. DeSoto Nurseries, DeSoto City, Fla.

**SEEDS—ROUGH LEMON, SOUR ORANGE.** CLEOPATRA. Pure, fresh, good germination. Also seedlings lineout size. De Soto Nurseries, DeSoto City, Fla.

**CROTALARIA SPECTABILIS**—Seed for sale. New crop, well cured, bright and clean. Price 25c per pound in 100 pound lots and over, 30c per pound in less quantities. F. C. B. Hastings, Bunnell, Lowell and San Antonio, Florida. F. M. LEONARD & COMPANY, Hastings, Florida.

**WANTED**—Position as packing house foreman: in citrus business twenty-five years; ten years' experience as foreman; married man. J. R. Henry, Okahumpka, Florida.

**MUST SACRIFICE** — Forty acre, six - year bearing Marsh Seedless grove. Indian River section. Heavy soil underlaid with marl. Excellent drainage. Two flowing wells. Now has crop of fruit and very heavy bloom. On hard road, seven miles from town, \$7,500. Rare opportunity.

H. H. HIELD, Owner  
Vero Beach, Fla.

## FOR SALE

Lists of Florida Citrus Growers compiled from recent survey of groves, arranged by counties. Name, address, acreage and legal description. Also list wealthy residents of Florida.

**W. L. Lamar**  
P. O. Box 163  
ATLANTA, GA.



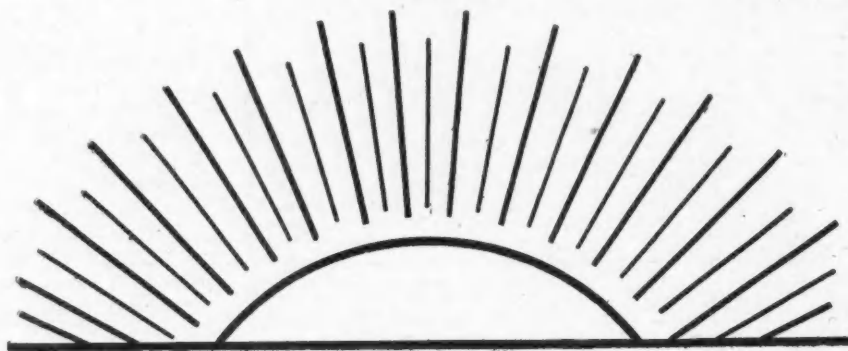
*Melvin, C.T.*

Florida Man Elected President  
National Fertilizer Association, *pres.*



C. T. MELVIN

President of the Gulf Fertilizer Company of Tampa, was elected president of the National Fertilizer Association at their annual convention in White Sulphur Springs, W. Va., this month. Mr. Melvin has been vice president of this organization for the past two years in addition to having held the office of president of the Independent Fertilizer Manufacturers Association for the past five years.



## Quality Is Coming Back!

Have you been watching the auction sales reports recently. Have you noticed how again Blue Goose citrus fruits, particularly grapefruit, again are increasing noticeably the spread between the prices they have been bringing and those realized for other well known brands of Florida fruit?

That means quality is coming back; that with better times, increasing confidence and improved purchasing power there is an expanding demand for known quality.

It means, too, that the Blue Goose trademark actually has gained prestige with public and trade during that trying period when quantity rather than quality so largely influenced purchases. Consumers today find in quality a satisfaction that takes on added zest from having for a time been denied.

It means, likewise, that for growers of good fruit there is great, and prospectively increasing, advantage to be had from having them identified to trade and public by that Blue Goose mark of distinction which actually has added to its excellent reputation.

### American Fruit Growers Inc.

Florida Division  
Orlando, Florida

